My 5” TV made in 1967.

This TV was made as a final year project while I was doing a post grad course at North Sydney Tech College in “Electronics” and looking at a career in tech teaching.

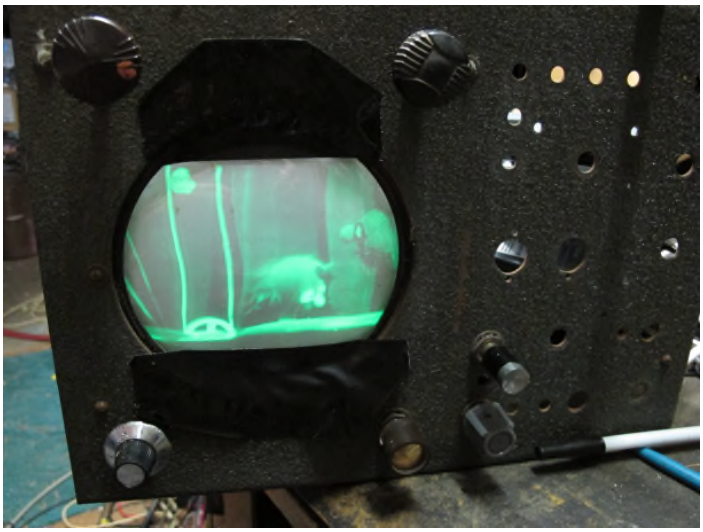
The problem with the course was that I knew more than the teachers and the syllabus. The teacher challenged me to construct something big and complex thinking I would make some thing like a basic amplifier or a radio set or something at the college level.

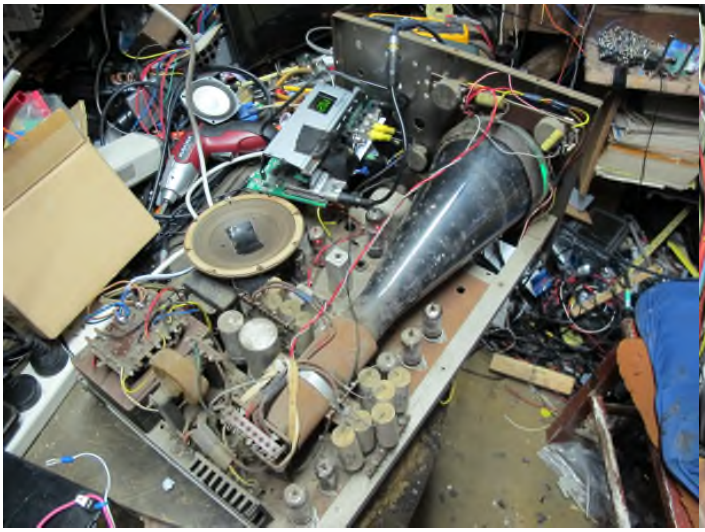
I cobbled together this TV based loosely on the RTV&H September 1957 design but using whatever parts I could scrimp up from junk. It worked fairly well and we actually used it to watch the news and “Homicide” until we could afford a real TV.

The teacher was amazed and I scored 100% in “practical” and 100% in “theory” but it was all too late as the Education Department and I had fallen out over a few things at a high level.

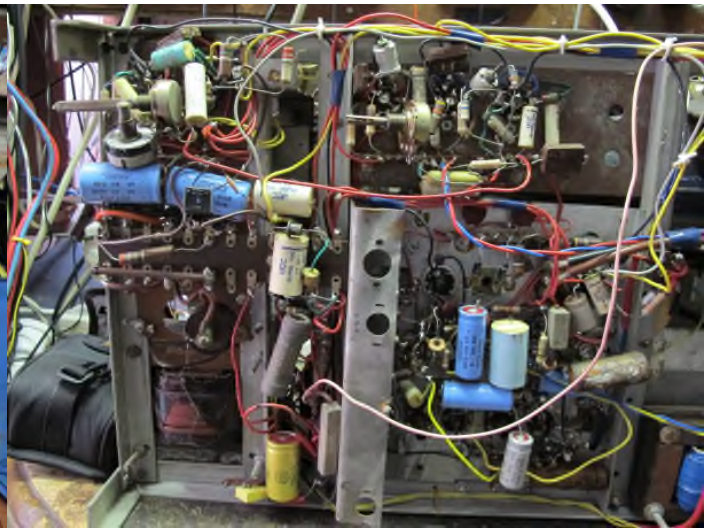
Basically I was sick of the rubbish they were teaching students at the time. The Universities and colleges were miles away from cutting edge in electronics. I was right in the middle of it and I refused to go to the country to teach rubbish and stayed in the city and in Industry and kept up with state of the art developments in solid-state electronics and printed circuit boards.

After about 1970 the TV has just lain under a bench in the workshop and occasionally switched on to see if it still worked. In 2013 46 years years after build the tuner will no longer be suitable as the TV networks close the old analog channels. I swapped out the original tuner with a digital assembly. The output signals worked out ok for sweep and video so the swap is a direct one and the tube can display the network pictures ok.

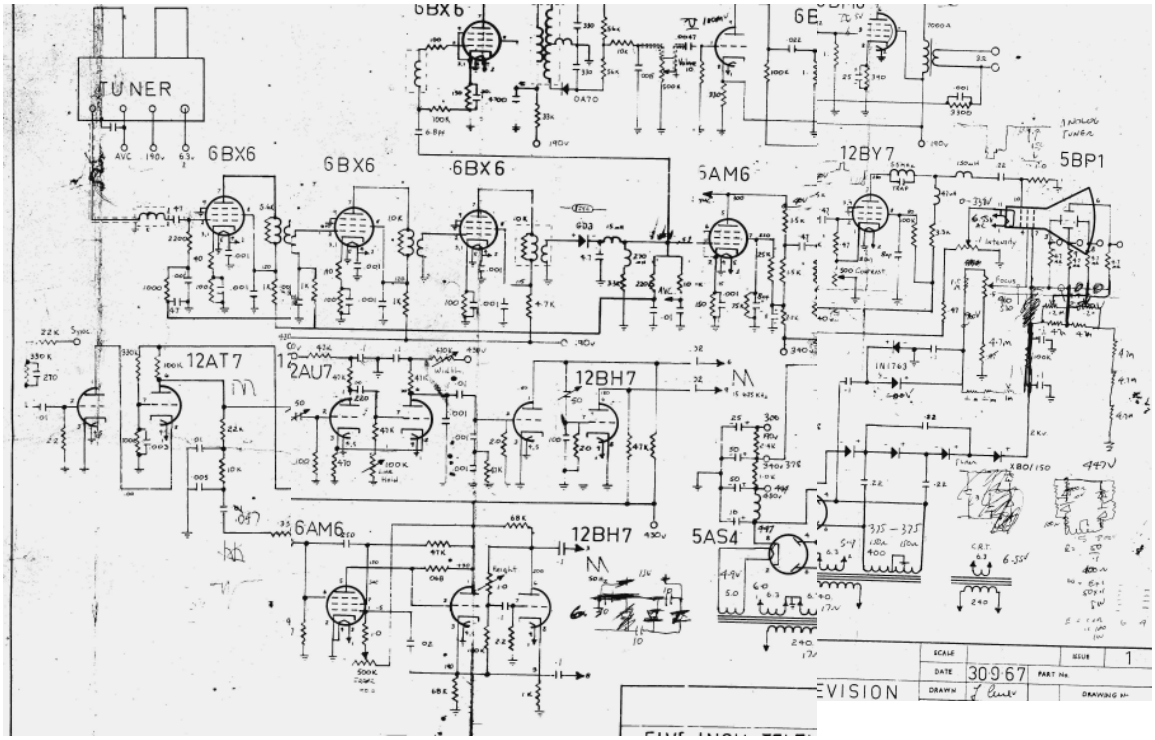




General view topside



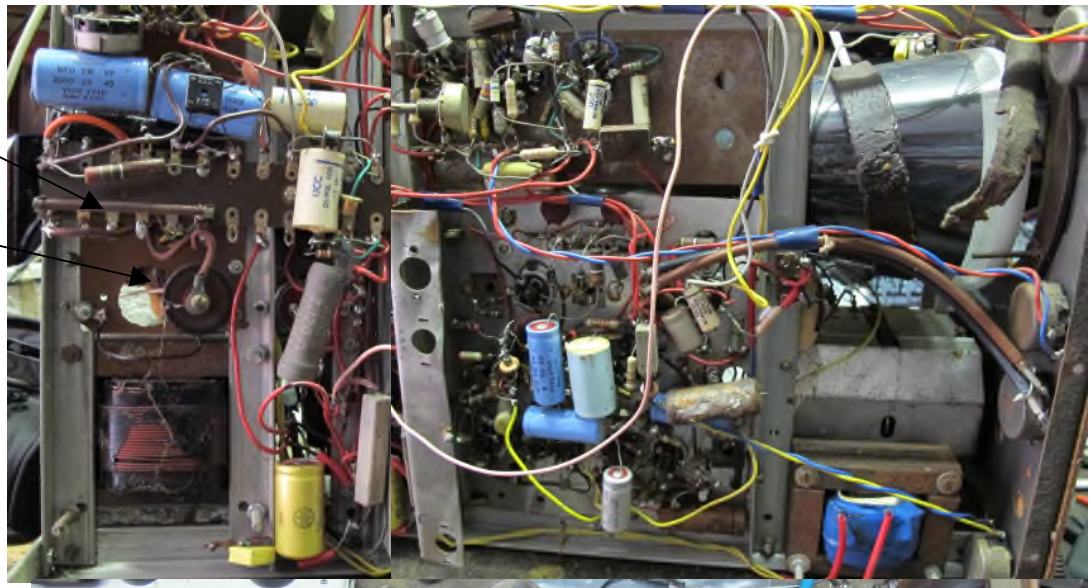
General view bottomside

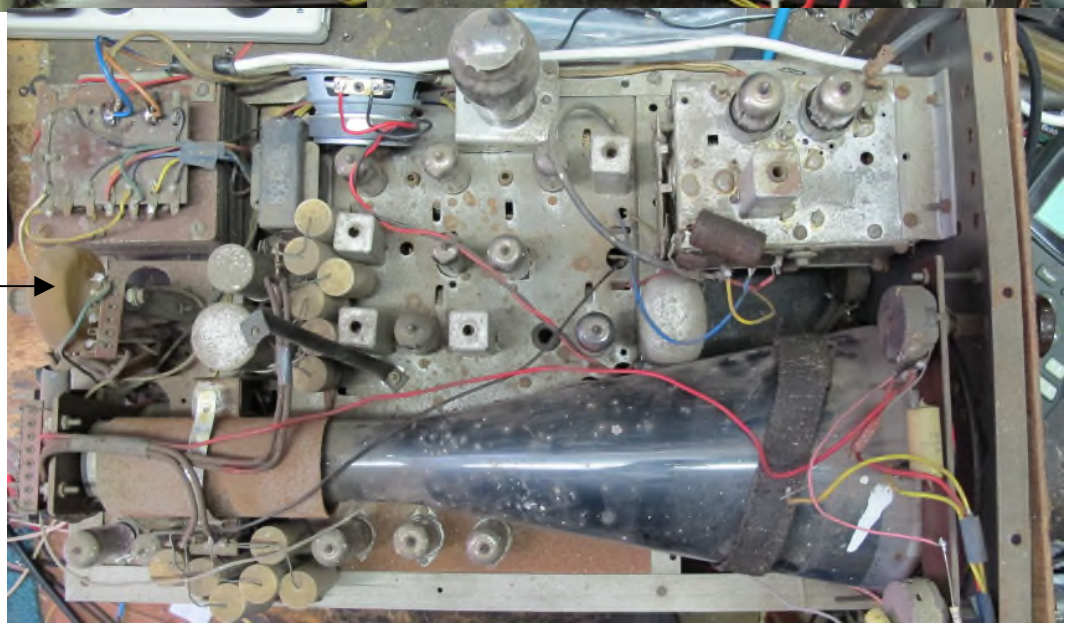


Original circuit 1967.

Rectifier stick

Oil fill cap





EHT coil

Neat construction!

Cheating.

Of course I cheated a bit with the set build by ratting an IF strip and tuner out of a damaged set thus saving me the trouble of winding all the inductors and setting the IF response.

I would have had real trouble doing this as I did not have a signal generator covering 40 Mhz IF or the signal bands above 100Mhz. At least with the IF and tuner only needing fixing I then had video and audio signals and all I had to do was make a fair copy of the RTV&H circuit for the sweep sync and tube circuits and I was home and hosed.

One of you TV geniuses may be able to pick which model of set I ratted for the IF strip and tuner by the valves used and the date 1967. The tuner has a 12AT7 a 6ES8 and is a rotary biscuit device with channels 2 , 7, 9 and 10 only.

Modifications.

The EHT supply was always a bit of a problem really needing about 2.5 kv to really light the tube up. The original circuit used a voltage quad doubler with 6H6 diodes but these used to fail regularly being way over-rated voltage wise. I replaced the 6H6 with the best HV diodes available but these also failed so in the end I built a fly back oscillator using one of the new fangled NPN power transistors as a 20 volt DC 20 Kc chopper on the primary producing 3 kv on the secondary. The secondary voltage was converted to DC by a stick rectifier with a oil filled HV filter cap.

Once every thing settled down the set was quite reliable and we were not that fussy so long as we could hear and see something. Then we bought a 17" AWA B/W and were amazed at the extra detail and being able to sit back a bit and see actors faces.

The end of the set.

In swapping the tuners out and running the set for some time, parts started to fail. There were hissing capacitors and circuits started to malfunction with resistors going open circuit and capacitors short circuit.

Then the power transformer gave up the ghost probably from shorted HV turns and ran at frying temperatures with bubbling varnish and that was the end of that.

I stripped out what parts were good for old time experiments, used the IF strip chassis in my AM+FM tuner described in the special projects section of this forum and parked the chassis back under a bench.

I don't think I'll rebuild it!

End of text. 25/01/16.